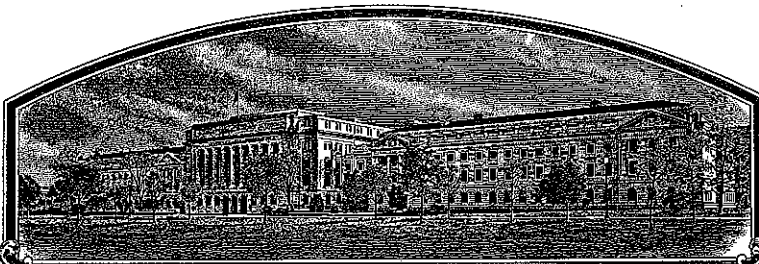


No.

200400134



THE UNITED STATES OF AMERICA

TO ALL TO WHOM THESE PRESENTS SHALL COME:

Carl O. & Rutgers, The State Univ. of New Jersey

Whereas, THERE HAS BEEN PRESENTED TO THE

Secretary of Agriculture

AN APPLICATION REQUESTING A CERTIFICATE OF PROTECTION FOR AN ALLEGED DISTINCT VARIETY OF SEXUALLY REPRODUCED, OR TUBER PROPAGATED PLANT, THE NAME AND DESCRIPTION OF WHICH ARE CONTAINED IN THE APPLICATION AND EXHIBITS, A COPY OF WHICH IS HEREUNTO ANNEXED AND MADE A PART HEREOF, AND THE VARIOUS REQUIREMENTS OF LAW IN SUCH CASES MADE AND PROVIDED HAVE BEEN COMPLIED WITH, AND THE TITLE THERETO IS, FROM THE RECORDS OF THE PLANT VARIETY PROTECTION OFFICE, IN THE APPLICANT(S) INDICATED IN THE SAID COPY, AND WHEREAS, UPON DUE EXAMINATION MADE, THE SAID APPLICANT(S) IS (ARE) ADJUDGED TO BE ENTITLED TO A CERTIFICATE OF PLANT VARIETY PROTECTION UNDER THE LAW.

NOW, THEREFORE, THIS CERTIFICATE OF PLANT VARIETY PROTECTION IS TO GRANT UNTO THE SAID APPLICANT(S) AND THE SUCCESSORS, HEIRS OR ASSIGNS OF THE SAID APPLICANT(S) FOR THE TERM OF TWENTY YEARS FROM THE DATE OF THIS GRANT, SUBJECT TO THE PAYMENT OF THE REQUIRED FEES AND PERIODIC REPLENISHMENT OF VIABLE BASIC SEED OF THE VARIETY IN A PUBLIC REPOSITORY AS PROVIDED BY LAW, THE RIGHT TO EXCLUDE OTHERS FROM SELLING THE VARIETY, OR OFFERING IT FOR SALE, OR REPRODUCING IT, OR IMPORTING IT, OR EXPORTING IT, OR CONDITIONING IT FOR PROPAGATION, OR STOCKING IT FOR ANY OF THE FOREGOING PURPOSES, OR USING IT IN PRODUCING A HYBRID OR DIFFERENT VARIETY THEREFROM, TO THE EXTENT PROVIDED BY THE PLANT VARIETY PROTECTION ACT. (84 STAT. 1542, AS AMENDED, 7 U.S.C. 2321 ET SEQ.)

FESCUE, TALL

'Guardian 21'

In Testimony Whereof, I have hereunto set my hand and caused the seal of the Plant Variety Protection Office to be affixed at the City of Washington, D.C. this third day of November, in the year two thousand and six.

Attest:

Commissioner
Plant Variety Protection Office
Agricultural Marketing Service

Secretary of Agriculture

U.S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE
SCIENCE AND TECHNOLOGY - PLANT VARIETY PROTECTION OFFICE

APPLICATION FOR PLANT VARIETY PROTECTION CERTIFICATE
(Instructions and information collection burden statement on reverse)

The following statements are made in accordance with the Privacy Act of 1974 (5 U.S.C. 552a) and the Paperwork Reduction Act (PRA) of 1995.

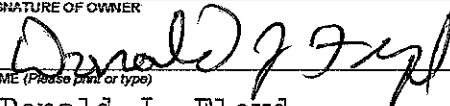
Application is required in order to determine if a plant variety protection certificate is to be issued (7 U.S.C. 2421). Information is held confidential until certificate is issued (7 U.S.C. 2426).

1. NAME OF OWNER TurfOne & Rutgers, The State Univ. of New Jersey		2. TEMPORARY DESIGNATION OR EXPERIMENTAL NAME Roberts DOL, DOL-01 (PT: 8/25/06)		3. VARIETY NAME Guardian 21	
4. ADDRESS (Street and No., or R.F.D. No., City, State, and ZIP Code, and Country) 30190 Hwy 34 SW Cook College Albany, OR 97321 88 Lipman Dr. New Brunswick, NJ 08901-8525		5. TELEPHONE (include area code) 541-967-0123		FOR OFFICIAL USE ONLY PVPO NUMBER 200400134 FILING DATE 3/10/2004	
7. IF THE OWNER NAMED IS NOT A "PERSON", GIVE FORM OF ORGANIZATION (corporation, partnership, association, etc.) Corp. & Public Univ.		8. IF INCORPORATED, GIVE STATE OF INCORPORATION Oregon		9. DATE OF INCORPORATION 1968	
10. NAME AND ADDRESS OF OWNER REPRESENTATIVE(S) TO SERVE IN THIS APPLICATION. (First person listed will receive all papers) Donald J. Floyd TurfOne 30190 Hwy 34 SW Albany, OR 97321				F E E S R E C E I V E D FILING AND EXAMINATION FEES: \$ 3,652.00 DATE 3/10/2004 CERTIFICATION FEE: \$ 768.00 DATE 10/23/2006	
11. TELEPHONE (include area code) 541-967-0123		12. FAX (include area code) 541-967-6103		13. E-MAIL dfloydpswres@proaxis.com	
14. CROP KIND (Common Name) Tall Fescue		16. FAMILY NAME (Botanical) Poaceae		18. DOES THE VARIETY CONTAIN ANY TRANSGENES? (OPTIONAL) <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO IF SO, PLEASE GIVE THE ASSIGNED USDA-APHIS REFERENCE NUMBER FOR THE APPROVED PETITION TO DEREGULATE THE GENETICALLY MODIFIED PLANT FOR COMMERCIALIZATION.	
15. GENUS AND SPECIES NAME OF CROP Festuca arundinacea		17. IS THE VARIETY A FIRST GENERATION HYBRID? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO		20. DOES THE OWNER SPECIFY THAT SEED OF THIS VARIETY BE SOLD AS A CLASS OF CERTIFIED SEED? (See Section 83(a) of the Plant Variety Protection Act) <input type="checkbox"/> YES (if "yes", answer items 21 and 22 below) <input checked="" type="checkbox"/> NO (if "no", go to item 23)	
19. CHECK APPROPRIATE BOX FOR EACH ATTACHMENT SUBMITTED (Follow instructions on reverse) a. <input checked="" type="checkbox"/> Exhibit A. Origin and Breeding History of the Variety b. <input checked="" type="checkbox"/> Exhibit B. Statement of Distinctness c. <input checked="" type="checkbox"/> Exhibit C. Objective Description of Variety d. <input type="checkbox"/> Exhibit D. Additional Description of the Variety (Optional) e. <input type="checkbox"/> Exhibit E. Statement of the Basis of the Owner's Ownership f. <input checked="" type="checkbox"/> Exhibit F. Declaration Regarding Deposit g. <input checked="" type="checkbox"/> Voucher Sample (3,000 viable untreated seeds or, for tuber propagated varieties, verification that tissue culture will be deposited and maintained in an approved public repository) h. <input checked="" type="checkbox"/> Filing and Examination Fee (\$4,382), made payable to "Treasurer of the United States" (Mail to the Plant Variety Protection Office)				21. DOES THE OWNER SPECIFY THAT SEED OF THIS VARIETY BE LIMITED AS TO NUMBER OF CLASSES? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO IF YES, WHICH CLASSES? <input type="checkbox"/> FOUNDATION <input type="checkbox"/> REGISTERED <input type="checkbox"/> CERTIFIED 22. DOES THE OWNER SPECIFY THAT SEED OF THIS VARIETY BE LIMITED AS TO NUMBER OF GENERATIONS? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO IF YES, SPECIFY THE NUMBER 1,2,3, etc. FOR EACH CLASS. <input type="checkbox"/> FOUNDATION <input type="checkbox"/> REGISTERED <input type="checkbox"/> CERTIFIED (If additional explanation is necessary, please use the space indicated on the reverse.)	
23. HAS THE VARIETY (INCLUDING ANY HARVESTED MATERIAL) OR A HYBRID PRODUCED FROM THIS VARIETY BEEN SOLD, DISPOSED OF, TRANSFERRED, OR USED IN THE U. S. OR OTHER COUNTRIES? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO IF YES, YOU MUST PROVIDE THE DATE OF FIRST SALE, DISPOSITION, TRANSFER, OR USE FOR EACH COUNTRY AND THE CIRCUMSTANCES. (Please use space indicated on reverse.)				24. IS THE VARIETY OR ANY COMPONENT OF THE VARIETY PROTECTED BY INTELLECTUAL PROPERTY RIGHT (PLANT BREEDER'S RIGHT OR PATENT)? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO IF YES, PLEASE GIVE COUNTRY, DATE OF FILING OR ISSUANCE AND ASSIGNED REFERENCE NUMBER. (Please use space indicated on reverse.)	

25. The owners declare that a viable sample of basic seed of the variety has been furnished with application and will be replenished upon request in accordance with such regulations as may be applicable, or for a tuber propagated variety a tissue culture will be deposited in a public repository and maintained for the duration of the certificate.

The undersigned owner(s) is(are) the owner of this sexually reproduced or tuber propagated plant variety, and believe(s) that the variety is new, distinct, uniform, and stable as required in Section 42, and is entitled to protection under the provisions of Section 42 of the Plant Variety Protection Act.

Owner(s) is (are) informed that false representation herein can jeopardize protection and result in penalties.

SIGNATURE OF OWNER		SIGNATURE OF OWNER 	
NAME (Please print or type) Donald J. Floyd		NAME (Please print or type) Donald J. Floyd	
CAPACITY OR TITLE Director of Research	DATE 3-5-04	CAPACITY OR TITLE Director of Research	DATE 3-5-04

(See reverse for instructions and information collection burden statement)

INSTRUCTIONS

GENERAL: To be effectively filed with the Plant Variety Protection Office (PVPO), ALL of the following items must be received in the PVPO: (1) Completed application form signed by the owner; (2) completed exhibits A, B, C, E; (3) for a seed reproduced variety at least 2,500 viable untreated seeds, for a hybrid variety at least 2,500 untreated seeds of each line necessary to reproduce the variety, or for tuber reproduced varieties verification that a viable (in the sense that it will reproduce an entire plant) tissue culture will be deposited and maintained in an approved public repository; (4) check drawn on a U.S. bank for \$2,705 (\$320 filing fee and \$2,385 examination fee), payable to "Treasurer of the United States" (See Section 97.6 of the Regulations and Rules of Practice.) Partial applications will be held in the PVPO for not more than 90 days, then returned to the applicant as unfilled. Mail application and other requirements to Plant Variety Protection Office, AMS, USDA, Room 500, NAL Building, 10301 Baltimore Avenue, Beltsville, MD 20705-2351. **Retain one copy for your files.** All items on the face of the application are self explanatory unless noted below. Corrections on the application form and exhibits must be initialed and dated. **DO NOT** use masking materials to make corrections. If a certificate is allowed, you will be requested to send a check payable to "Treasurer of the United States" in the amount of \$320 for issuance of the certificate. Certificates will be issued to owner, not licensee or agent.

Plant Variety Protection Office

Telephone: (301) 504-5518

FAX: (301) 504-5291

Homepage: <http://www.ams.usda.gov/science/pvpo/pvp.htm>

200400134

ITEM

- 18a. Give: (1) the genealogy, including public and commercial varieties, lines, or clones used, and the breeding method; (2) the details of subsequent stages of selection and multiplication; (3) evidence of uniformity and stability; and (4) the type and frequency of variants during reproduction and multiplication and state how these variants may be identified
- 18b. Give a summary of the variety's distinctness. Clearly state how this application variety may be distinguished from all other varieties in the same crop. If the new variety is most similar to one variety or a group of related varieties:
- (1) identify these varieties and state all differences objectively;
 - (2) attach statistical data for characters expressed numerically and demonstrate that these are clear differences; and
 - (3) submit, if helpful, seed and plant specimens or photographs (prints) of seed and plant comparisons which clearly indicate distinctness.
- 18c. Exhibit C forms are available from the PVPO Office for most crops; specify crop kind. Fill in Exhibit C (Objective Description of Variety) form as completely as possible to describe your variety.
- 18d. Optional additional characteristics and/or photographs. Describe any additional characteristics that cannot be accurately conveyed in Exhibit C. Use comparative varieties as is necessary to reveal more accurately the characteristics that are difficult to describe, such as plant habit, plant color, disease resistance, etc.
- 18e. Section 52(5) of the Act requires applicants to furnish a statement of the basis of the applicant's ownership. An Exhibit E form is available from the PVPO.
19. If "Yes" is specified (*seed of this variety be sold by variety name only, as a class of certified seed*), the applicant **MAY NOT** reverse this affirmative decision after the variety has been sold and so labeled, the decision published, or the certificate issued. However, if "No" has been specified, the applicant may change the choice. (See *Regulations and Rules of Practice*, Section 97.103).
22. See Sections 41, 42, and 43 of the Act and Section 97.5 of the regulations for eligibility requirements.
23. See Section 55 of the Act for instructions on claiming the benefit of an earlier filing date.

21. CONTINUED FROM FRONT (Please provide a statement as to the limitation and sequence of generations that may be certified.)

22. CONTINUED FROM FRONT (Please provide the date of first sale, disposition, transfer, or use for each country and the circumstances, if the variety (including any harvested material) or a hybrid produced from this variety has been sold, disposed of, transferred, or used in the U.S. or other countries.)

Date of first sale: February 26, 2004 in Illinois, USA

23. CONTINUED FROM FRONT (Please give the country, date of filing or issuance, and assigned reference number, if the variety or any component of the variety is protected by intellectual property right (Plant Breeder's Right or Patent).)

NOTES: It is the responsibility of the applicant/owner to keep the PVPO informed of any changes of address or change of ownership or assignment or owner's representative during the life of the application/certificate. There is no charge for filing a change of address. The fee for filing a change of ownership or assignment or any modification of owner's name is specified in Section 97.175 of the regulations. (See Section 101 of the Act, and Sections 97.130, 97.131, 97.175(h) of the Regulations and Rules of Practice.)

To avoid conflict with other variety names in use, the applicant must check the appropriate recognized authority. For example, for agricultural and vegetable crops, contact: Seed Branch, AMS, USDA, Room 213, Building 306, Beltsville Agricultural Research Center--East, Beltsville, MD 20705. Telephone: (301) 504-8089. <http://www.ams.usda.gov/lsg/seed/lsg-sd.htm>

According to the Paperwork Reduction Act of 1995, an agency may not conduct or sponsor, and a person is not required to respond to a collection of information unless it displays a valid OMB control number. The valid OMB control number for this collection of information is (0581-0055). The time required to complete this information collection is estimated to average 1.4 hours per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information.

The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, sex, religion, age, disability, political beliefs, sexual orientation, or marital or family status. (Not all prohibited bases apply to all programs.) Persons with disabilities who require alternative means for communication of program information (Braille, large print, audiotape, etc.) should contact USDA's TARGET Center at (202) 720-2600 (voice and TDD). To file a complaint of discrimination, write USDA, Director, Office of Civil Rights, Room 326-W, Whitten Building, 14th and Independence Avenue, SW, Washington, DC 20250-9410 or call (202) 720-5984 (voice and TDD). USDA is an equal opportunity provider and employer.

S&T-470 (04-01) designed by the Plant Variety Protection Office with WordPerfect 6.0a. Replaces STD-470 (02-99) which is obsolete.

Exhibit A
Origin and Breeding History
Guardian 21 Tall Fescue

Guardian 21 tall fescue (*Festuca arundinacea* Schreb.) is a low-growing, dark green, fine-leaved, dense turf-type tall fescue selected from the maternal progenies of 31 clones. Guardian 21 was selected for high shoot density, dark-green color, dwarf/semi-dwarf growth habit, and high seed yield. Approximately 89% of the original parents contained the *Neotyphodium* endophyte.

The parental germplasm of **Guardian 21** trace to several sources. Forty percent of the maternal germplasm traces to a few plants selected from or related to Apache tall fescue. Nineteen percent traces to a few plants selected from Athens, GA near the University of GA in 1977. Eleven percent of the germplasm traces to a few plants selected in Lexington, KY at the Lexington City Park in 1979. Another 11 percent trace to a few plants selected from the Princeton University Campus in Princeton, NJ and used in the development of Rebel tall fescue. Seven percent of the germplasm traces to several plants selected from an inter-specific crossing program with perennial ryegrass under the direction of C.R. Funk, Rutgers University, East Brunswick, NJ, during the late 1970's to early 1980's. Four percent of the maternal germplasm used in the development of **Guardian 21** traces to a few plants selected from Holly Springs CC in Mississippi in 1977. Another four percent of the germplasm traces to several plants selected from a farm in Eastern North Carolina, just east of Raliegh, NC, in 1975. Another four percent traces to a few plants selected from the Atlanta, GA area near GA tech in the late 1970's.

These maternal sources have been crossed with plants selected from old turfs of the United States in a germplasm collection program initiated in 1962 and used in the development of Rebel tall fescue (Funk et al., 1981). Attractive clones were selected from old turfs in Birmingham, AL; Athens, Atlanta, and Milledgeville, GA; Preston, ID; Baltimore, MD; Bayonne, Jersey City, Elizabeth, Princeton, and Cape May, NJ; eastern North Carolina; Philadelphia, PA; Nashville, TN; Lexington, KY; Cincinnati, OH; Dallas, TX; and northern Mississippi. The tall fescue plants selected from old turfs were of unknown origin. All were large patches of turf surviving in stressful environments indicating that they had persisted and developed over a period of many years.

A few hundred attractive, turf-type plants were collected and established in spaced-plant nurseries and/or frequently mowed clonal evaluation trials at Rutgers University. All but a few dozen of the most promising plants were quickly discarded. The best selections were very different from any tall fescue variety in existence at the time of collection. They produced lower-growing turfs with finer leaves, greater density, darker color, and greater tolerance of close mowing.

The most promising plants were identified by their persistence and appearance in old turfs and their performance in spaced-plant nurseries, mowed clonal evaluation tests, and single-plant progeny trails under turf maintenance. Intercrosses of the best performing plants were subjected to varying cycles of phenotypic and genotypic selection depending on their date of collection. New sources of germplasm were added to the breeding program as it became available from the continuing collection program. Each cycle of selection showed continued progress in producing lower-growing, darker green, attractive plants with improved turf performance scores. Selection was also effective in maintaining high seed yields, and good stress tolerance. Substantial progress was made in developing tall fescues with finer leaves, a lower growth profile, increased persistence under close mowing, and increased density.

Large numbers of single-plant progenies were seeded in turf evaluation trials at the Plant Science Research Farm at Adelphia, NJ in 1995, 1996, 1997 and 1998. The plants selected for progeny evaluation were selected from spaced-plant nurseries at Adelphia following varying cycles of phenotypic and genotypic selection of germplasm selected from old turfs and germplasm selected from or related to Rebel tall fescue.

Following a period of brown patch disease in 1998, a total of 6150 tillers were selected from the best performing single-plant progeny turf plots from the 1995, 1996, 1997 and 1998 tall fescue test at Adelphia. One hundred and forty-five single-plot progenies were selected from 510 plots from 8 different populations from the 1995 test, 585 plots from 9 different populations in the 1996 test, 1055 plots from 10 different populations from the 1997 test and 635 plots from 9 different populations from the 1998 test. These plants were established in greenhouse flats prior to their transfer to two spaced-plant nurseries in the fall of 1999. Selection was based on performance records as well as appearance at the time the plants were selected from these progeny plots. Selection of plants from each progeny was based on an attractive dark green color, medium-fine leaves, abundant tillering, a more open, medium coarse canopy structure and freedom from brown patch disease. In the spring of 2000, 38 plants were selected from those nurseries for characteristics such as short stature characterized as dwarf/semi-dwarf growth habit, dark green color, high shoot density, freedom from disease and high seed yield potential. The selected plants were moved prior to anthesis, to an isolated crossing block at Adelphia called *DOL*. A total of 31 plants with the best floret fertility and highest seed yield from 28 different mother lines were harvested. Seed from these 31 plants was sent to Pickseed West, Inc. (PSW) for Roberts Seed, Co. for breeder, foundation and certified seed increase.

One hundred plants were reared from sowing individual progeny seed of each of the 31 families. Seventy progeny per each family were ultimately transplanted to a field nursery at the research facility of PSW, October 2000. Plants were cultured during the 2001 spring season, and approximately 30% of progenies were removed from the nursery prior to anthesis. Equal roguing was conducted among each family. Plants were removed if they were lighter green in foliage color, of coarse leaf texture, or of small plant girth (in respect to volume of reproductive heads) relative to the mean of the overall population. An additional 3% of progeny plants were removed from the nursery, post anthesis, being moderately to severely infected by stem rust, *Puccinia graminis*. Seed was bulk harvested from all remaining progeny in July 2001. This seed was considered breeder seed of *Guardian 21*.

A seed stock field was sown using breeder seed in September 2001. The field was located near Woodburn, OR. Seed stock was harvested off of this field in 2002 and 2003. A certified seed production field planted with the aforementioned seed stock was harvested in 2003. *Guardian 21* has been observed to be uniform and stable for 5 years and/or generations. No variants have been observed during this time nor to the present.

Diagram of Origin and Breeding History of Guardian 21 Tall Fescue

1. 1962 to 1994

Germplasm collection, evaluation, and genetic improvement.

2. 1995-1998

Planted single-plant progenies of plants selected from current cycles of population improvement programs in closely mowed turf trials at Adelphia and North Brunswick, NJ.

3. 1999

Selected 6150 plants from 145 of the best performing single-plant progeny turf plots planted in 1995, 1996, 1997 and 1998. Established selected plants in two spaced-plant nurseries at Adelphia, NJ.

4. 2000

Moved 38 plants to an isolated crossing block. Harvested from 31 plants with excellent appearance and floret fertility.

5. 2001

Progeny of 31 families were established in a nursery at Pickseed West, Inc. Autumn 2001. Breeder seed of *Guardian 21* was harvested from the nursery, July 2001.

References

1. Buckner, Robert C., Jerrell B. Powell, and Rod V. Frakes. 1979. Historical Development, in Buckner, Robert C., and Lowell P. Bush (editors) Tall Fescue. Agronomy Monograph 20. American Society of Agronomy, Crop Science Society of America, Soil Science Society of America, Inc., Publishers. Madison, Wisconsin pages 1-8.
2. Funk, C.R., R.E. Engel, W.K. Dickson, and R.H. Hurley. 1981. Registration of Rebel tall fescue. Crop Sci. 21:632.

Exhibit B
Varietal Distinctness
***Guardian 21* Tall Fescue**

Guardian 21 is a new, distinct cultivar for turfgrass utility. Upon evaluation of morphological data generated from two growing seasons of a spaced planted cultivar trial, *Guardian 21* is most similar to the cultivar *Avenger*. *Guardian 21* can be differentiated from *Avenger* based on reproductive heading date. *Guardian 21* is 5 to 6 days later than *Avenger*.

Table 1. Reproductive heading date for tall fescue cultivars during two growing seasons.†

Cultivar	2002	2003
Guardian 21	May 10	April 29
Avenger	May 5	April 23
Bonanza	May 10	April 29
Shortstop	May 10	May 1
Silverado	May 10	April 29
Crewcut	May 10	April 27
Kentucky-31	May 4	April 20
Wrangler	May 10	April 26
LSD@0.05	3 days	3 days

† Data condensed from a spaced planted trial of progenies from 32 tall fescue cultivars or experimental lines. The trial was established at the Pickseed West, Inc. research facility, Albany, OR in November 2001.

U.S. DEPARTMENT OF AGRICULTURE
PLANT VARIETY PROTECTION OFFICE, AMS, USDA
NATIONAL AGRICULTURAL LIBRARY Bldg., Rm. 500
10301 BALTIMORE Blvd.
BELTSVILLE, MD 20705

OBJECTIVE DESCRIPTION OF VARIETY
TALL & MEADOW FESCUES
(*Festuca* spp.)

NAME OF APPLICANT(S) TurfOne & Rutgers, The State Univ. of New Jersey TEMPORARY DESIGNATION Roberts DOL, DOL-01 VARIETY NAME Guardian 21

ADDRESS (Street and No., or R.F.D. No., City, State, and ZIP Code)
30190 Hwy 34 SW, Albany, OR 97321

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PVPO NUMBER
200400134

Place the appropriate number that describes the varietal characteristic of this variety in the boxes below. Use leading zeroes when necessary (e.g. 089). Characteristics described, including numerical measurements, should represent those that are typical for the variety. Measured data should be for SPACED PLANTS. Royal Horticultural Society or any recognized color fan may be used to determine plant colors. Characteristics marked with an asterisk * are characteristics which should be recorded.

* 1. SPECIES: (With comparison varieties, use varieties within the species of the application variety)

1 1 = *F. arundinacea* (Tall)

Turf Types

1 = Kentucky 31 2 = Rebel 3 = Olympic 4 = Bonanza 5 = Arid 6 = Rebel II
7 = Shortstop 8 = Silverado 9 = Rebel Jr. 10 = Mini Mustang 11 = Crewcut 12 = Bonsai
13 = Southeast 14 = Cayenne

Forage Types

20 = Kentucky 31 21 = Martin 22 = Forager 23 = Mozark
24 = Kenhy 25 = AU Triumph 26 = Fawn 27 = Cajun

2 2 = *F. pratensis* (Meadow)

30 = Admira 31 = Beaumont 32 = Comtessa 33 = Ensign 34 = Trader

* 2. CYTOLOGY:

42 Chromosome Number

3. ADAPTATION: (0 = Not Tested; 1 = Not Adapted; 2 = Adapted)

2 Transition Zone 2 West 2 Northeast 2 Other (Specify): Pacific
region

* 4. MATURITY: (Date First Headed, 10% of Panicle Emergence)

7 Maturity Class 1 = Very early () 2 = AU Triumph 3 = Early (Fawn) 4 = K31, Kenhy 5 = Medium (Rebel)
6 = Bonanza 7 = Late (Silverado) 8 = 9 = Very late

Date Headed May 10

Location Albany, OR

 Days earlier than

Maturity same as 12 Comparison Variety

6 Days later than 1

200400134

* 5. MATURE PLANT HEIGHT CM: (Average of 100 culms from crown to top of panicle, if panicle is nodding, straighten) * INTERNODE LENGTH CM: (First internode subtending the flag leaf)

6 7 6 cm Height

1 1 1 cm Internode length

1 9 2 cm shorter than 4

4 0 cm shorter than 4

Height same as 8 Comparison Variety Length same as 8 Comparison variety

 cm taller than cm longer than

* HEIGHT AT EAR EMERGENCE CM: (Flag leaf height from crown to flag leaf node)

2 8 3 cm Height

1 2 7 cm shorter than 4

Height same as 8 Comparison Variety

 cm taller than

* 6. GROWTH HABIT: (Mature Plants)

7 1 = Prostrate () 3 = Semiprostrate () 5 = Horizontal ()
7 = Semierect (Rebel) 9 = Erect (Mini Mustang)

* 7. RHIZOMES (Psuedo):

 mm Length X 1 = Absent () 2 = Rare (Rebel) 3 = Common ()

* 8. LEAF BLADE: (Tiller leaves/ turf color)

* 5 Color: 1 = Light green () 3 = Medium light green () 5 = Green ()
7 = Medium dark green () 9 = Very dark green ()

4 Specify rating of comparison variety - **Silverado**

* 1 Anthocyanin: 1 = Absent () 9 = Present ()

* 9 Basal Hairs: 1 = Absent () 9 = Present ()

* 5 Margins: 1 = Smooth () 5 = Semi-rough () 9 = Rough ()

* 5 Width Class: 1 = Very coarse () 3 = Coarse () 5 = Medium ()
7 = Fine () 9 = Very Fine ()

* TILLER LEAF LENGTH CM: (First leaf subtending the flag leaf)

* TILLER LEAF WIDTH MM:

1 2 9 cm Tiller Leaf Length

2 8 mm Tiller Leaf Width

3 3 cm shorter than 8

1 2 mm narrower than 4

Length same as 11 Comparison Variety

Width same as 11 Comparison variety

 cm longer than

 mm wider than

8. LEAF BLADE: (continued)

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FLAG LEAF LENGTH CM:

FLAG LEAF WIDTH MM:

___ **10.5** ___ cm Flag Leaf Length___ **2.6** ___ mm Flag Leaf Width___ **3.2** ___ cm shorter than ___ **12** ______ **0.7** ___ mm narrower than ___ **4** ___Length same as ___ **14** ___ Comparison VarietyWidth same as ___ **11** ___ Comparison variety

___ cm longer than ___

___ mm wider than ___

* 9. LEAF SHEATH: (Basal Portion)

* **9** Anthocyanin (seedling): 1 = Absent (K31) 9 = Present ()* **9** Auricle Hairiness: 1 = Absent () 9 = Present ()

* 10. PANICLE: (At seed maturity except where noted.)

* **5** Shape: 1 = Narrow-tapering () 5 = Ovate () 7 = Oblong () 9 = Other (specify)* **5** Type: 1 = Compact (appressed) 5 = Intermediate () 7 = Open () 9 = Other (specify)* **9** Orientation: 1 = Nodding () 9 = Erect ()* **9** Branch Pubescence: 1 = Glabrous () 9 = Pubescent () **2003 Data****Main*** **6** Anther Color (At anthesis): 1 = Yellowish Green 2 = Green 3 = Bluish Green **12% yellow-green**
4 = Purplish 5 = Reddish 6 = Other (Specify) **31% green*** **3** Glume Color (At anthesis): 1 = Yellowish Green 2 = Green 3 = Bluish Green
4 = Purplish 5 = Reddish 6 = Other (Specify) **6=yellow 57% yellow*** **1 6 . 2** cm Panicle Length (from base to tip, if nodding, straighten; after anthesis)___ **2 . 9** ___ cm shorter than ___ **8** ___Length same as ___ **14** ___ Comparison Variety

___ cm longer than ___

* 11. SEED: (With Lemma & Pelea)

* **2 5 3 0** mg per 1000 seeds___ **3 2 3** ___ mg less than ___ **12** ___Weight same as ___ **11** ___ Comparison Variety

___ mg more than ___

PALEA: (Keels or Margins) ___ Hairs: 1 = Absent () 5 = Short (Missouri 96) 9 = Long ()

LEMMA: ___ Hairs: 1 = Absent (Kenhy) 5 = Several () 9 = Many (Missouri 96)

___ **5.6** ___ mm Lemma Length (Mature)___ **14.8** ___ mm Lemma width (of 10 seeds)___ **0.8** ___ mm shorter than ___ **11** ______ **0.8** ___ mm narrower than ___ **13** ___

Length same as 8 Comparison Variety Width same as 14 Comparison variety
 mm longer than mm wider than 200400134
 10. PANICLE: (continued)

*AWNS: 9 AWNS: 1 = Absent () 9 = Present (Falcon) 100 % Plants with awns

2.2 mm Awn length (Of those present.)

1.1 mm Shorter than 8 **2003 data**

Length same as 4 Comparison Variety

 mm Longer than

12. DISEASE, INSECT, AND NEMATODE REACTION: (0= Not Tested 1= Least Resistant 9= Most Resistant)

0 Melting-out *Drechslera poae*

0 Blind Seed *Gloeotinia temulenta*

0 Leaf Spot *D. siccans*

0 Dollar Spot *Lanzia, Mollerdiscus* spp.

0 Net Blotch *D. dictyoides*

0 Stem Rust *Puccinia graminis*

7 Brown Patch *Rhizoctonia solani*

0 T. Blight *Typhula incarnata*

0 C. Leaf Spot *Cercospora fectuae*

0 Pythium Blight *Pythium* spp.

0 Pink Snow Mold *Gerlachia nivalis*

0 Powdery Mildew *Erysiphe graminis*

0 Silver Top *F. tricinatum, F. roseum*

0 Crown Rust *Puccinia coronata*

9 Other Disease Pink patch

 Other Insect

 Other Nematode

13. ENVIRONMENTAL STRESS

5 Drought Stress 1 = Susceptible () 5 = Tolerant () 9 = Resistant ()

 Shade Stress 1 = Susceptible () 5 = Tolerant () 9 = Resistant ()

8 Winter Stress 1 = Susceptible () 5 = Tolerant () 9 = Resistant ()

14. GIVE VARIETY OR VARIETIES THAT MOST CLOSELY RESEMBLE THE APPLICATION VARIETY. For the following characteristics, indicate the degree of resemblance with the following scale:

1 = Application variety is less than comparison variety 2 = Same as 3 = More than, better, greater, darker, etc.

Character	Varieties	Rating	Character	Varieties	Rating
Leaf Width	Bonsai	2	Leaf Color	Silverado	3
Panicle Color	Silverado	2	Panicle Shape	Wrangler	2
Seed Size (length)	Bonsai	1	Cold Injury	Bonsai	2
Winter Color	Bonsai	2	Heat	Bonsai	2

* 15. EXPERIMENTAL: Give a brief summary of the experimental design utilized to collect the data used on this form. Cultural conditions, number of plants measured and plant spacing must be specified.

Unless noted otherwise, data supplied for Exhibit C were generated in the 2002 season from a spaced planted nursery of individuals from 32 cultivars (or experimental lines) cultured at the research facility of Pickseed West, Inc., Albany, OR. The nursery was established in November 2001. Treatments were arranged in a randomized complete block experimental design with three replications. Each replication for an entry was represented by 20 individuals, transplanted in a single row 50 cm apart within the row. Plant nutrition followed 39.2 kgN/ha^{-1} at transplanting and again in October 2002. Additionally, $100.8 \text{ kgN/ha}^{-1}$ was split applied in the spring of 2002 and again in 2003. One half of the spring N was applied in March; the other half was applied in April each of the two years.

Scores for items in part 12 of Exhibit C were taken from the 2002 NTEP data progress report no. 03-1.

U.S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE

Application is required in order to determine if a plant variety protection certificate is to be issued (7 U.S.C. 2421). The information is held confidential until the certificate is issued (7 U.S.C. 2426).

EXHIBIT E
STATEMENT OF THE BASIS OF OWNERSHIP

1. NAME OF APPLICANT(S) TurfOne & Rutgers, The State Univ. of New Jersey	2. TEMPORARY DESIGNATION OR EXPERIMENTAL NUMBER Roberts DOL, DOL-01	3. VARIETY NAME Guardian 21
4. ADDRESS (Street and No., or R.F.D. No., City, State, and ZIP, and Country) 30190 Hwy 34 SW Albany, OR 97321	5. TELEPHONE (include area code) 541-967-0123	6. FAX (include area code) 541-967-6103
7. PVPO NUMBER 200400134		

8. Does the applicant own all rights to the variety? Mark an "X" in the appropriate block. If no, please explain. ☐ YES ☒ NOTurfOne jointly owns 'Guardian 21' with Rutgers, The State Univ.
of New Jersey.9. Is the applicant (individual or company) a U.S. national or a U.S. based company? If no, give name of country. ☒ YES ☐ NO10. Is the applicant the original owner? ☒ YES ☐ NO If no, please answer one of the following:

(Per 8/25/06 per applicant's request)

a. If the original rights to variety were owned by individual(s), is (are) the original owner(s) a U.S. National(s)?

☐ YES ☐ NO If no, give name of country

b. If the original rights to variety were owned by a company(ies), is (are) the original owner(s) a U.S. based company?

☐ YES ☐ NO If no, give name of country

11. Additional explanation on ownership (Trace ownership from original breeder to current owner. Use the reverse for extra space if needed):

PLEASE NOTE:

Plant variety protection can only be afforded to the owners (not licensees) who meet the following criteria:

1. If the rights to the variety are owned by the original breeder, that person must be a U.S. national, national of a UPOV member country, or national of a country which affords similar protection to nationals of the U.S. for the same genus and species.
2. If the rights to the variety are owned by the company which employed the original breeder(s), the company must be U.S. based, owned by nationals of a UPOV member country, or owned by nationals of a country which affords similar protection to nationals of the U.S. for the same genus and species.
3. If the applicant is an owner who is not the original owner, both the original owner and the applicant must meet one of the above criteria.

The original breeder/owner may be the individual or company who directed the final breeding. See Section 41(a)(2) of the Plant Variety Protection Act for definitions.

According to the Paperwork Reduction Act of 1995, an agency may not conduct or sponsor, and a person is not required to respond to a collection of information unless it displays a valid OMB control number. The valid OMB control number for this information collection is 0581-0055. The time required to complete this information collection is estimated to average 0.1 hour per response, including the time for reviewing the instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information.

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